



# **AQS Aspects of Exceptional Events Rule**

11/22/2016

For illustration and discussion purposes only

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# Agenda

- Regulatory Requirements
- Present Air Quality System (AQS) Capabilities
- AQS Changes Required by New Rule
- Other Usability Improvements to Support Rule
- The Path Forward
- Q&A



# Regulatory Requirements for AQS (1)

## Part 50.14

- Support for initial event definition
- Support for flagging of data associated with causing a violation of a NAAQS
- Support for “concurrency” by the EPA with exclusion of flagged data from Design Values
- For PM: Exclusion of all data for days with concurred flags for specific NAAQS.
- Removal of flagging deadlines



# Regulatory Requirements for AQS (2)

## **Rule Preamble:**

- Support for unique name for event
- Support multiple events for single data point
- Support for additional metadata for event.
- Support for event geographic and temporal scope
- Support for State jurisdictional authority
- Support for association of multiple events with individual sample data measurement (Aggregation 1)
- Support for NAAQS violations caused by multiple events (Aggregation 2)



## Present AQS Capabilities

- Creating event definitions by Screening Group
- Manual flagging sample measurements
- Associating flagged data with event definitions
- Reports of status of flagged data
- New requirements presently supported
  - Removal of flagging deadlines
  - Aggregation of multiple events per NAAQS Standard (Design Value Period)



# Present Maintain Event Form

Maintain Exceptional Events (National Air Data Group)

Define Event Associate Raw Data with Event

Screen Grp Name Colorado

Qualifier Code	Qualifier Description	Event Begin Date	Event End Date
RJ	High Winds		

Event Description High winds/blowing dust event on 20091005 under investigation by APCD

Comment On October 5, 2009, a strong surface low in southeastern Colorado and strong winds aloft combined to produce sustained southwesterly winds of 30 to 35 mph and gusts as high as 52 mph at Alamosa, Colorado. Abnormally dry to severe drought conditions prevailed across southwest Colorado and the Four-Corners area of Arizona, Utah, and New Mexico on October 5, 2009. NOAA GOES Aerosol and Smoke Product (GASP) imagery for this day suggests that there was widespread blowing dust in the San Luis Valley.

Url



# Present Event Association Form

Maintain Exceptional Events (National Air Data Group)

Define Event Associate Raw Data with Event

Event Description  
High winds/blowing dust event on 20091005 under investigation by APCD

Screen Grp Name Qualifier Code Qualifier Description Event Begin Date Event End Date  
Colorado RJ High Winds

State Code County Code Site ID Parameter POC  
Query Affected Monitors

Query By Date Range Associate All Disassociate All Reset Actions

Monitor Key	Begin Date	End Date	# Associated	# Unassociated	Action
08-003-0001-81102-1	20060428	20160405	1	8	No Action
08-003-0001-85101-1	20130531	20130531	0	1	No Action
08-003-0003-81102-1	20020521	20160405	0	8	No Action
08-003-0003-85101-1	20130531	20130531	0	1	No Action
08-007-0001-81102-3	20060215	20130408	0	2	No Action
08-029-0004-81102-1	20090425	20090425	0	1	No Action
08-043-0001-81102-1	19990331	19990331	0	1	No Action

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# Present Status Report

United States Environmental Protection Agency

Air Quality System

Raw Data Qualifier Report (v 1.1)

Report Date: May. 13, 2010

Parameter: PM2.5 - Local Conditions ( 88101 )

Standard Units: Micrograms/cubic meter (LC) ( 105 )

<u>Monitor Key /</u> <u>Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Sample Qualifier</u> <u>Code</u> <u>Description</u>	<u>Action</u> <u>Date</u>	<u>NAAQS Standard</u>	<u>Concurrence</u> <u>Ind</u> <u>Date</u>
37-147-0006-88101-1	2008-04-06 00:00		AN Machine Malfunction			
403 Government Circle						
37-147-0006-88101-1	2008-04-09 00:00		AN Machine Malfunction			
403 Government Circle						
37-147-0006-88101-1	2008-04-11 00:00	3.5	RC Chem. Spills & Indust. Accidents		PM25 24-hour 2006	Y 2010-05-12
403 Government Circle					PM25 Annual 2006	N 2010-05-12
	<b>Event:</b>		Test event for R. Coats	2010-05-12	Justification does not meet requirements	
	<b>Comment/URL:</b>		http://www.epa.gov			
<b>Monitor Qualifier Counts:</b>			RC Chem. Spills & Indust. Accidents			Count: 1
			AN Machine Malfunction			Count: 2





## AQS Changes – Event Definition

- Event Metadata: Unique name, type (qualifier), description
- Geographic Scope
- Temporal Scope (begin & end dates, required)
- NAAQS Standards (optional at creation)
- Target Date for Demonstration(s)
  - Possibly NAAQS standard specific



## AQS Required Changes (2)

- Support for Multiple Events associated with single measurement
- Particulate Matter: Flagging any hour for day will cause entire day to be flagged
- Support for Event Definition use by multiple Agencies (Screening Groups)
- Support for Associating event with affected Sites based on Geographic and Temporal scope
- Interactive (one-step) flagging of sets of data for Site-Parameter and time period



## Other Possible Usability Improvements

- Create new “NAAQS Standard” in AQS only when Level or Form changes. (e.g. the 24-hour standard for PM<sub>2.5</sub> did not change between the 2006 and 2013 NAAS Revisions)
- Automatic notification (via email) of State air program director and Regional EE contact when event definition associated with monitors in their jurisdiction
- Allow geographic scope of event to be time dependent
- Support for graphical display of concentration time-series for affected Site-Parameter with annotations for NAAQS level and event begin and end dates.
  - Indicate flagged data on time series graph
  - Allow interaction with time series graph to be used for data flagging and/or concurrence
- Allow Event-Affected data to be identified on other AQS outputs



## The Path Forward

- The AQS Federal Team proposes creation of a workgroup of Regional and/or SLT stakeholders to help with usability issues. If you are interested in participating, please send an email to [coats.robert@epa.gov](mailto:coats.robert@epa.gov).
- The AQS team will proceed with required changes that are transparent to users and will work with the workgroup to maximize usability
- Expect to implement most changes by end of Q1, 2017.



# Questions?